Dana Point Harbor
Boat Launching Facility

First Phase Funding of $200,000
(Total Grant Amount $2,541,000)

SUMMARY

The County of Orange (County) has applied to the Department of Boating and Waterways for a grant to make improvements to the Dana Point Harbor Boat Launching Facility (BLF). This report concerns phase I funding of $200,000 for planning and engineering for this project.

Dana Point Harbor is located in the City of Dana Point, along the southern shoreline of Orange County. It is 15 miles north of the City of Oceanside, and 15 miles south of the City of Newport Beach.

The boat launching facility, originally constructed in 1971 by the County and the U.S. Army Corps of Engineers, consists of an eight-lane boat launching ramp, two boarding floats, a 300-space vehicle/trailer parking area, a restroom/office building, a 560 space dry boat storage yard, and a boat hoist.

The proposed project entails the following at the Dana Point Harbor BLF facility: 1) Demolition and reconstruction of the eight-lane boat launching ramp, 2) construction of a new ramp apron, 3) installation of three new boarding floats, 4) construction of a boat washdown area, 5) rehabilitation/ reinforcement of the south wharf wall, 6) installation of slope protection, 7) reinforcement of the cut-off wall on the north side of the ramp, 8) installation of drainage, 9) installation of lighting, 10) installation of signs.

The benefit/cost ratio must be greater than unity (1.00) before public investment in a project is justified. This project is considered economically feasible with a benefit/cost ratio of 3.31.

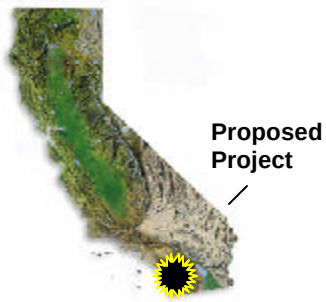
INTRODUCTION

Grant Applicant

The loan applicant for this project is the County of Orange (County). The County operates 27 regional parks, seven miles of beaches and three harbors through its Resources and Development Management Department, Division of Harbors, Beaches and Parks. The divison also operates and manages historical facilities and natural resources.

Project Identification

The proposed project is to improve the Dana Point Harbor Boat Launching Facility (BLF). The boat launching facility consists of an eight-lane boat launching ramp, two boarding floats, a 300-space vehicle/trailer parking area, a restroom/office building, a 560 space dry boat storage yard, and a boat hoist. In addition to the boat launching



facility, on site is a 2,201 slip marina, a boat yard and boat repair facility, the Mariner's Village shopping area, a yacht club and youth facility, the Ocean Institute, and picnic and park areas.

Project Location

Dana Point Harbor is located in the City of Dana Point, along the southern shoreline of Orange County. It is 15 miles north of the City of Oceanside, and 15 miles south of the City of Newport Beach.

Access to Project

From Interstate 5 going south, take the Pacific Coast Highway exit and go north one mile. Turn left on Dana Harbor Drive and travel 1/2 mile to the Dana Point Harbor entrance at Golden Lantern.

Area Description

Dana Point Harbor originally was a natural cove along the southern shoreline of Orange County. Steep bluffs surround it on the north and west and Doheny State Beach adjoins the Harbor on the southeast. The Harbor has established itself as one of the premier small boat harbors on the West Coast, with a diverse range of recreational and commercial activities. It is host to frequent annual events including the Festival of Whales

in March, a boat show on Memorial Day weekend and the Tallships Festival in September. The population in Orange County as of January 1, 2004 is 3,016,298.

Previous Commission Action

There has been no previous Commission action at the Dana Point Harbor BLF.

ENGINEERING CONSIDERATIONS

At the time of application, each project is evaluated by a Department of Boating and Waterways (DBW) engineer. The DBW engineer reviews the application, checks/verifies estimated costs, and visits the project site. The DBW Planning Unit and the engineer then recommend the best proposed alternative. This project is being recommended because the facility is approximately 33 years old and in need of refurbishment.

Proposed Project

The proposed project entails the following at the Dana Point Harbor BLF facility: 1) Demolition and reconstruction of the eight-lane boat launching ramp, 2) construction of a new concrete ramp apron, 3) installation of three new 8' by 150' pile-guided concrete boarding floats, 4) construction of a boat washdown area, 5) rehabilitation/reinforcement of the wharf wall on the south side of the ramp, 6) installation of slope protection at the base of the south wharf wall, 7) reinforcement of the cut-off wall on the north side of the ramp, 8) installation of a trench drain and an oil-water separator, 9) installation of lighting at the head of the ramp and at the washdown area, 10) installation of directional signs and a DBW credit sign.

Cost Estimate

PROJECT ITEM		
Demolition	$	176,000
Boat Launching Ramp		902,000
Ramp Apron		264,000
Boarding Floats		122,000
Washdown Area		28,000
South Wharf Wall		317,000
Slope Protection		88,000
North Cut-off Wall		74,000
Drainage		28,000
Lighting		18,000
Signs		16,000
SUBTOTAL	$	2,033,000
Contingency		169,000
Engineering*		203,000
Inspection*		85,000
Permits		51,000
TOTAL	$	2,541,000

*NOTE: Engineering and Inspection services completed by the grantee may not be reimbursed by DBW.

Conclusion

There are no particularly difficult or unusual problems associated with this project and it falls within the normal range of practice for design and construction of projects of this type. Therefore, the proposed project is considered feasible from an engineering standpoint at a total estimated cost of $2,541,000.

ECONOMIC ANALYSIS

Introduction

The economic justification of any proposed project rests upon a comparison of the benefits and costs attributable to the project. A benefit/cost analysis is performed to demonstrate whether the total cost of a project to society is justified by its overall benefit to society. A project is deemed beneficial and therefore economically feasible when total benefits equal or exceed total costs. A glossary with data sources follows this section.

The Benefit/Cost Process

Costs and Benefits, and user data are verified by comparison with data published in the 2002 California Boating Facilities Needs Assessment (BNA). Volume V - Boating Economic Assessments and Facilities Demand Projections - summarizes the economic benefits of boating to California, the values of recreational boating in California, and the demand projections for boating and boating facilities derived from the 2001California Boats and Boaters Survey (BBS). This project is located in the South Coast region.

The first step in the benefit/cost analysis is to determine annual benefits. Annual benefits are determined by calculating the annual base year user days (Table 1A) and the annual percentage growth rate (Table 1B). These two are multiplied to give the project user days per year. The project user days per year are multiplied by a user day value plus the expected annual percent increase in the Consumer Price Index to give annual benefits (Table 2).

TABLE 1A

ANNUAL BOAT LAUNCHES	45,000
AVERAGE PERSONS ABOARD	3.79
ANNUAL BASE YEAR USER DAYS	170,550

Next, annual costs are determined by multiplying the existing or projected annual boat launches for the facility by the cost per boat launching and the expected annual percent cost escalation rate to give annual costs. If there is no charge for boat launching at the facility, a standard cost is substituted in the equation (Table 3).

TABLE 1B

NUMBER IN MKT. AREA		ACTUAL	PROJECTED	
		2004	2024	
BOATS < 26' IN LENGTH	low	223,207	257,871	0.78%
	high	223,207	298,512	1.69%
ANNUAL GROWTH RATE				1.2%

TABLE 2

PROJECT USER DAYS

1	172,656
2	174,789
3	176,947
4	179,133
5	181,345
6	183,584
7	185,852
8	188,147
9	190,471
10	192,823
11	195,204
12	197,615
13	200,056
14	202,526
15	205,027
16	207,560
17	210,123
18	212,718
19	215,345
20	218,005

USER DAY VALUE	$ 17.89
CPI	2.5%

ANNUAL BENEFITS	
1	3,088,821
2	3,205,142
3	3,244,726
4	3,284,798
5	3,325,365
6	3,366,434
7	3,408,009
8	3,450,098
9	3,492,707
10	3,535,842
11	3,579,509
12	3,623,716
13	3,668,469
14	3,713,775
15	3,759,640
16	3,806,071
17	3,853,076
18	3,900,662
19	3,948,835
20	3,997,603

Project benefits per year and project operating costs per year are then discounted to yield their net present value. Since the value of a dollar is considered to be greater in the present year than in some future year, a discount rate is applied in order to de-inflate the future dollars and to convert the benefits and costs occurring over the 20-year grant period to a present day value. In this manner, the present day value may be comparable to other values in the present.

The sum of the present benefits and the discounted future benefits is the net present value of the project (Table 4). The sum of the present costs, including capital costs, and the discounted future costs is the net present cost of the project (Table 5).

The net present value of benefits is then divided by the net present value of costs to yield the benefit/cost ratio. The benefit/cost ratio must be greater than unity (1.00) before public investment in a project is justified (Table 6).

Annual Benefits

Annual base year user days for this project are 170,550. (Table 1A). The annual percentage growth rate is 1.2 (Table 1B). Annual benefits are shown in Table 2. The net present value of benefits is shown in Table 4.

Annual Costs

Annual costs are shown in Table 3. The net present value of costs is shown in Table 5.

Benefit/Cost Ratio

The benefit/cost ratio for this project is 3.31 (Table 6). This means that estimated benefits exceed estimated costs. The construction of this project is, therefore, is economically justified.

Dana Point Harbor BLF

Financial Considerations

Projects are publicly funded from boaters tax dollars. After the project is funded, the grantee must maintain the facility for 20 years at no additional cost to the Department. The completed project will be open to all on an equal and reasonable basis. There is a $10.00 fee to launch a boat at the Dana Point Harbor BLF.

RECOMMENDATION

In view of the foregoing demonstration of the project's engineering and financial feasibility, staff recommends that the Boating and Waterways Commission consent to first phase grant funding of $200,000 (total grant amount of $2,541,000) to the County of Orange for improvements to the Dana Point Harbor BLF.

TABLE 3

BOAT LAUNCHING FEE		10.00	
ANNUAL LAUNCHES		45,000	
ANNUAL COST		$450,000	
ANNUAL COST ESCALATION		7.60%	
ANNUAL GROWTH RATE			1.20%
ANNUAL COSTS	1	$ 450,000	$ 462,150
	2	$ 484,200	$ 497,273
	3	$ 520,999	$ 535,066
	4	$ 560,595	$ 575,731
	5	$ 603,200	$ 619,487
	6	$ 649,044	$ 666,568
	7	$ 698,371	$ 717,227
	8	$ 751,447	$ 771,736
	9	$ 808,557	$ 830,388
	10	$ 870,007	$ 893,498
	11	$ 936,128	$ 961,403
	12	$1,007,274	$1,034,470
	13	$1,083,827	$1,113,090
	14	$1,166,197	$1,197,685
	15	$1,254,828	$1,288,709
	16	$1,350,195	$1,386,651
	17	$1,452,810	$1,492,036
	18	$1,563,224	$1,605,431
	19	$1,682,029	$1,727,443
	20	$1,809,863	$1,858,729

TABLE 4

	BENEFITS		NET PRESENT VALUE
Year	Benefits	Discount Rate	Benefits
0	$3,088,821	1.00	$3,088,820
1	$3,205,142	1.05	$3,067,120
2	$3,244,726	1.09	$2,971,290
3	$3,284,798	1.14	$2,878,460
4	$3,325,365	1.19	$2,788,520
5	$3,366,434	1.25	$2,701,400
6	$3,408,009	1.30	$2,617,000
7	$3,450,098	1.36	$2,535,230
8	$3,492,707	1.42	$2,456,020
9	$3,535,842	1.49	$2,379,280
10	$3,579,509	1.55	$2,304,950
11	$3,623,716	1.62	$2,232,930
12	$3,668,469	1.70	$2,163,160
13	$3,713,775	1.77	$2,095,580
14	$3,759,640	1.85	$2,030,100
15	$3,806,071	1.94	$1,966,670
16	$3,853,076	2.02	$1,905,230
17	$3,900,662	2.11	$1,845,700
18	$3,948,835	2.21	$1,788,030
19	$3,997,603	2.31	$1,732,170
Total Net Present Value of Benefits			$47,547,660

The discount rate being used is 4.50%. This is equivalent to the interest rate being charged by the Department of Boating and Waterways on its public loans. Present value is determined by dividing future benefits by $(1+r)^n$, where r is the discount rate and n is the number of years into the future.

Glossary/Data Sources

Much of the data below was derived from the 2002 California Boating Facilities Needs Assessment (BNA) - a comprehensive assessment of boats and boating facilities statewide (authored by the California State University, Sacramento Foundation and the NewPoint Group Management Consultants).

1. Annual Base Year User Days - annual boat launches times average persons aboard a boat.

2. Annual Boat Launches - existing or projected yearly boat launches at a facility, estimated by the grantee, or from regional data from the BBS.

3. Average Persons Aboard a Boat - regional data from the BBS.

4. Annual Percentage Growth Rate - the average of the low and high boat usage (over the 20-year life expectancy of the project) derived from boat forecasts regional data for boats less than 26 foot in length.

TABLE 5

		COSTS		NET PRESENT VALUE
Year	Capital Costs		Discount Factor	Cost
0	$2,000,000	$462,150	1.000	2,462,150
1		$497,273	1.045	475,860
2		$535,066	1.092	489,980
3		$575,731	1.141	504,510
4		$619,487	1.193	519,480
5		$666,568	1.246	534,890
6		$717,227	1.302	550,760
7		$771,736	1.361	567,090
8		$830,388	1.422	583,920
9		$893,498	1.486	601,240
10		$961,403	1.553	619,070
11		$1,034,470	1.623	637,440
12		$1,113,090	1.696	656,350
13		$1,197,685	1.772	675,820
14		$1,288,709	1.852	695,870
15		$1,386,651	1.935	716,510
16		$1,492,036	2.022	737,770
17		$1,605,431	2.113	759,650
18		$1,727,443	2.208	782,190
19		$1,858,729	2.308	805,390
Total Present Value of Costs:				$14,375,940

The discount rate being used is 4.50%. This is equivalent to the interest rate being charged by the Department of Boating and Waterways on its public loans. Present value is determined by dividing future benefits by (1+r)n, where r is the discount rate and n is the number of years into the future.

5. Boat Forecasts Regional Data - boat ownership in California by region and boat length through 2020. Data sources include DMV Year-End Boat Registration Report; DMV Boat Registration Data Tapes; California Department of Finance, County Population Estimates for January 1; California Department of Finance, Interim County Population Projections; US MARAD, Merchant Vessels of the U.S.

6. User Day Value - the measure of the value of one day of recreation to the user. For the purposes of this analysis, it is the value of recreation provided by publicly accessible waterways and boating facilities within California. The user day value was determined by using a technique known as the travel cost method. The travel cost method assumes that an individual's willingness to pay time and travel expenses for a recreational outing can be estimated based on the number of trips that they make at different travel costs. These costs can then be used as a proxy to estimate the "price" of recreation.

The BBS estimated a travel cost per day for recreational boating in California, which was then divided by the average number of persons aboard a boat on an average boating trip. This yielded an average travel cost per person per day of boating of $17.89. This is the user day value used in this benefit/cost analysis.

7. Consumer Price Index - monthly data on changes in the prices paid by urban consumers for a representative basket of goods and services.

8. Boat launching fees - existing or projected fees for boat launching from grantee.

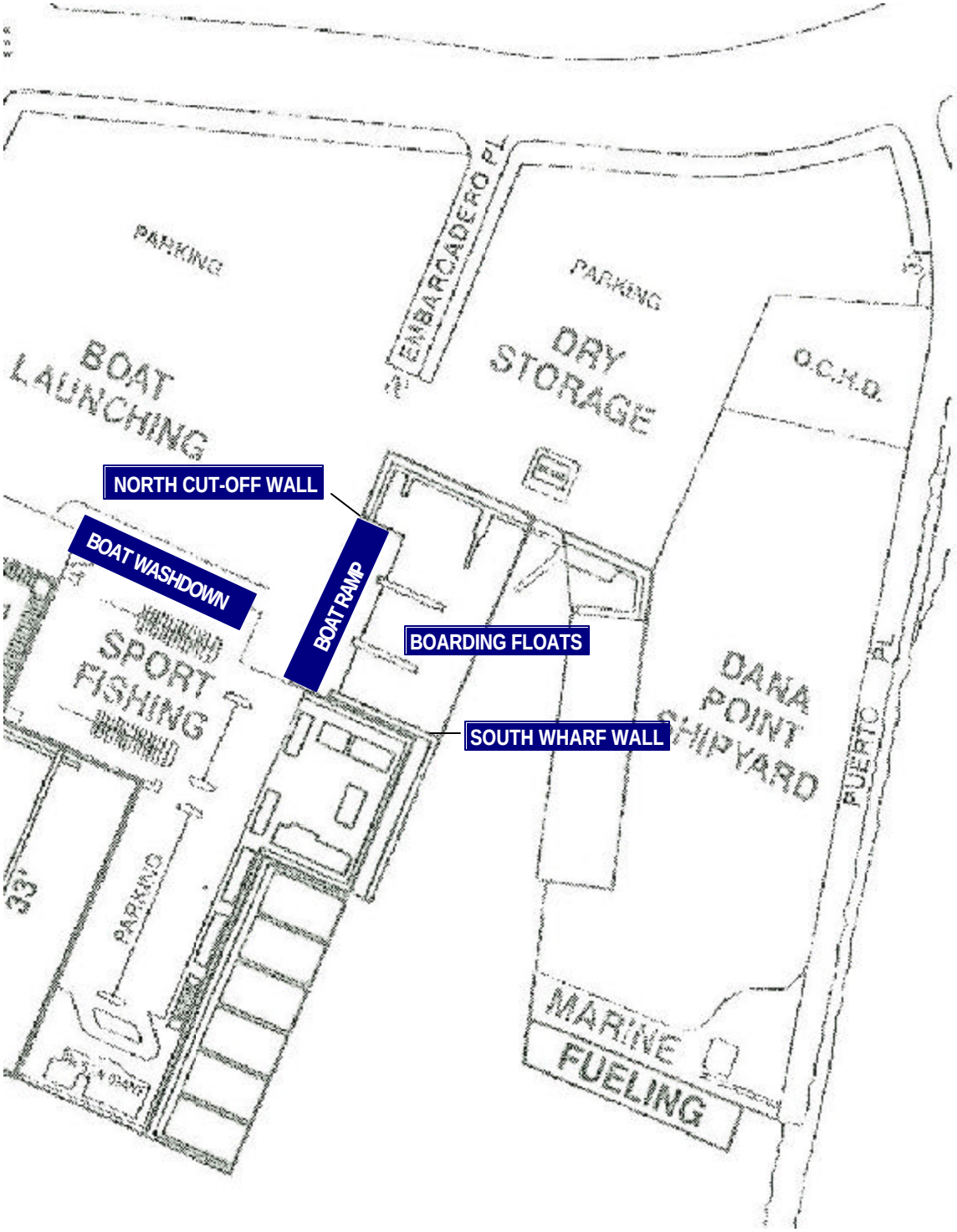
TABLE 6

NET PRESENT VALUE OF BENEFITS	$47,547,660
NET PRESENT VALUE OF COSTS	$14,375,940
BENEFIT/COST RATIO	3.31

9. Annual Percentage Cost Escalation Rate- the annual percent increase in the 20-city average of the construction cost index.

10. Standard cost - The cost to be used in the calculation of annual costs when the boat launching facility does not charge a fee. This cost ($5.23) is derived from a DBW Fee Survey completed in August 2001, and is increased by the Consumer Price Index annually.

11. Regional Data - In the BNA, California is divided into ten regions: North Coast, San Francisco, Central Coast, South Coast, San Diego, Northern Interior, Sacramento Basin, Central Valley, Eastern Sierra, and Southern Interior.



Dana Point Harbor BLF